

MTS-3270US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: M. Shimada et al. : Art Unit: 2872  
Serial No.: 09/935,027 : Examiner: E. Cherry  
Filed: August 22, 2001 :  
For: OPTICAL ELEMENT AND :  
METHOD OF FABRICATION :  
THEREOF

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**RESPONSE TO  
OFFICE ACTION DATED DECEMBER 24, 2002**

Assistant Commissioner for Patents  
Washington, D.C. 20231

S I R :

Responsive to the Official Action dated, December 24, 2002, please amend  
the above-identified application as follows:

IN THE CLAIMS:

Please replace claims 1, 4, 6, 7, 8, 11, 12, 13, 14, 15, and 16 with the  
following claims:

1 1. (Amended) An optical element comprising:  
2 a substrate having a channel for an optical waveguide; and  
3 a material which has a refractive index higher than that of said substrate and is  
4 filled in said channel for optical waveguide or is disposed on said substrate;  
5 wherein the refractive index in a part of said material varies substantially  
6 periodically or is substantially continuously monotone increasing or decreasing in the  
7 direction of light propagation.

1 4. (Amended) An optical element comprising:  
2 a substrate having or not having a channel for an optical waveguide; and